Amendments to the Claims:

This listing of claims replaces any and all prior claim lists.

Listing of Claims:

Claim 1 (currently amended). A copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms, having melt flow rate of from [[1]] 1.5 to 100 g/10min, an activation energy for melt flow of 60 kJ/mol or more, melt tension at 190°C (MT), intrinsic viscosity ([η]) and a chain length A which satisfy the following formula (1) to (3), wherein the chain length A is a chain length at peak position of a logarithm normal distribution curve of a component having the highest molecular weight among logarithm normal distribution curves obtained by dividing a chain length distribution curve obtained by gel permeation chromatography measurement into at least two logarithm normal distribution curves.

$2 \times MFR^{-0.59} < MT < 20 \times MFR^{-0.59}$ (1),

$1.02 \times MFR^{-0.094} < [\eta] < 1.50 \times MFR^{-0.156}$ (2), and

$\log A \geq -0.0815 \times \log (MFR) + 4.05$ (3).

Claim 2 (currently amended). A copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms, having melt flow rate of from [[1]] 1.5 to 100 g/10min, an activation energy for melt flow of 60 kJ/mol or more, melt tension at 190°C (MT), intrinsic viscosity ([η]) and a characteristic relaxation time (τ ; unit is sec) at a temperature of 190°C which satisfy the following formula (1), (2) and (4).

$2 \times MFR^{-0.59} < MT < 20 \times MFR^{-0.59}$ (1),

$1.02 \times MFR^{-0.094} < [\eta] < 1.50 \times MFR^{-0.156}$ (2), and

$\tau \geq 8.1 \times MFR^{-0.746}$ (4).

Claim 3 (currently amended). The copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms according to Claim 1 or 2, wherein a swell ratio (SR) and the [η] satisfy a relation of the following formula (5) or (6):

in a case of $[\eta] < 1.20$,

$-0.91 \times [\eta] + 2.262 < SR < 2$ (5), and

in a case of $[\eta] \geq 1.20$,

$1.17 < SR < 2$ (6).

Claim 4 (new). The copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms according to claim 1, wherein the copolymer has a melt flow rate of from 1.5 to g/10 min.

Claim 5 (new). The copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms according to claim 2, wherein the copolymer has a melt flow rate of from 1.5 to 8 g/10 min.

Claim 6 (new). The copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms according to claim 1, wherein the copolymer has a melt flow rate of from 2.0 to 8 g/10 min.

Claim 7 (new). The copolymer of ethylene and α-olefin of from 4 to 20 carbon atoms according to claim 2, wherein the copolymer has a melt flow rate of from 2.0 to 8 g/10 min.